SP-1743.1 US

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant :	Brandon A. Bartling et al.	Art Unit :	1745
Serial No. :	10/743,585	Examiner :	Gregg Cantelmo
Filed :	December 22, 2003		
For :	Tab System for a Metal-Air Electrochemical Cell		

DECLARATION UNDER 37 CFR §1.132

I, Brandon A. Bartling, do hereby declare and say:

My home address is 685 Ashberry Lane, Avon Lake, Ohio 44012.

I have a Bachelor of Science degree in Chemical Engineering from the University of Nebraska at Lincoln and a Master of Science degree in Chemical Engineering from Case Western Reserve University.

I have worked in the field of electrochemical batteries for over 5 years.

I have been employed by Eveready Battery Company, Inc., for over 5 years, during which I have been a Quality Engineer for about one year and a Technology Engineer for over 5 years.

I am an Applicant in the above-identified patent application.

I declare that I have determined the material types used in tab systems according to the above-identified patent application and tab systems removed from commercially available Rayovac brand button size zinc-air batteries. Both of these are compared in the attached Exhibit A to the tab system disclosed by Oltman et al. in U.S. Patent No. 4,649,090 (Seal Tab for a Metal-Air Electrochemical Cell). Commercially available Rayovac batteries were selected because I believed the tab systems used compared closely with the seal tab disclosed by Oltman et al. This was confirmed by testing of samples removed from the Rayovac batteries. As shown in Exhibit A, each tab system included a base material (face stock) layer (corresponding to the first polymer of the present application), an adhesive layer on one side of the face stock for sealing the tab system to an exterior surface of a metal-air cell, and an overlaminate layer (corresponding to the second polymer layer of the present invention) bonded to the opposite side of the face stock. For each of the three tab systems, the face stock layer was a 3-ply biaxially oriented polypropylene material (determined optically from microscope photographs of cross-

sectioned samples of the present invention and the Rayovac brand batteries), the adhesive layer was an easily removable acrylic adhesive, and the overlaminate layer was a plastic film.

Oltman et al. generally disclose a tab system in which the overlaminate layer is a plastic film (column 4, lines 29-32). Examples of plastic films include, but are not limited to polyester and acetate (column 4, lines 32-34 and claim 5). In embodiments of the present invention, the overlaminate is also a plastic film - for example, crystalline or semicrystalline polymers, either biaxially oriented or not biaxially oriented (page 11, lines 3-6). In the Examples, the second polymer layer was biaxially oriented polypropylene film. The overlaminate layer of the tab systems from the commercially available Rayovac product was a polypropylene film; film orientation was not tested.

The loss stiffness, oxygen permeability and peel strength characteristics of the Oltman et al. seal tab were not disclosed, and the capability of constructing tab systems as disclosed for the purpose of testing those characteristics was not readily available to me. In order to determine if those characteristics were inherent in the seal tab disclosed by Oltman et al., I determined those values for the tab system used on commercially available Rayovac batteries. If there is a reasonable expectation that the prior art seal tab of Oltman et al. exhibits the same loss stiffness, oxygen permeability and peel strength as the present invention because it appears to be substantially identical to at least some of the tab systems exemplified in the present application, then it is also reasonable to expect that other tab systems substantially identical to those of both the present invention and Oltman et al. in the same ways would also have the same characteristics. Conversely, if a tab system that is substantially identical to the tab systems of the present invention and Oltman et al. has loss stiffness, oxygen permeability and peel strength characteristics that are different from the characteristics of the present invention, it is reasonable to expect that a tab system according to Oltman et al. can also be different from the present invention with regard to the same characteristics.

Summarized in Exhibit A are the results of loss stiffness, peel strength and oxygen permeability determinations of samples of the tab systems from Rayovac brand batteries compared to corresponding ranges of embodiments of the present invention, taken from the Declaration under 37 CFR § 1.132 signed by me on March 5, 2007 (previously submitted). This

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summary shows that the tab systems for commercially available Rayovac batteries were determined to have loss stiffness, oxygen permeability and peel strength values outside the broadest ranges recited in the claims of the present application. From this data and for the reasons presented above, I concluded that tab systems according to Oltman et al. do not necessarily have the loss stiffness, oxygen permeability and peel strength characteristics of the present invention.

I further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patents issuing thereon.

Signed:

7/16/07
Date

Brandon A. Bartling

EXHIBIT A

Tab System Component Compositions

Tab System Component	Embodiment of Invention	Oltman et al. Tab System	Rayovac Battery Tab System
Overlaminate Layer	plastic film (e.g., biaxially oriented polypropylene)	plastic film (e.g. polyester or acetate)	plastic film (polypropylene)
Face Stock Layer	3-ply biaxially oriented polypropylene	3-ply biaxially oriented polypropylene	3-ply biaxially oriented polypropylene
Adhesive Layer	acrylic adhesive	acrylic adhesive	acrylic adhesive

Tab System Characteristics

Tab System Characteristic	Embodiment of Invention	Rayovac Battery Tab System
Loss Stiffness (N/m @ 20-25°C)	25,000 to < 55,000	approximately 4,500
Oxygen Permeability $\frac{(cm^3 \times m \times mmHg)}{(m^2 \times day)}$	50 to 150	5 to 8
Peel Strength (psi)	6.5 to 11	3.7 to 6.2